

# Aliz

## data challenge

### Knowledge Graph Challenge

Probably you have heard the term 'Knowledge is power'. In our case it is more like 'Knowledge is effectiveness'. During the everyday life of a professional services company like Aliz there is a lot of heterogeneous information gathered and it is crucial to our competitive edge and success how well we can distribute and reuse this knowledge among our people.

In this challenge your task is to create a solution that stores this diverse internal data in a graph database and makes it easily accessible through a natural language interface.

#### Introduction to the Challenge

As a professional services company we work on numerous projects using different technology stacks solving different kinds of problems for our customers in different industries. Due to this diversity one of the most important parts of our internal knowledge is the experience and skills of our people as individuals and experience of Aliz as a company.

Being able to access and query this knowledge can make a difference during the whole lifecycle of our projects: during the pre-sales phase we can look-up relevant projects to showcase to our potential customers, we can optimize the team assignments to projects by the skills of our engineers and if someone faces a challenging problem during the project delivery, they can find help inside the organization.

In this challenge we would like you to create a solution that makes the life of professional services companies easier by helping them to collect, store, maintain and query the knowledge domain which includes the skills of the individuals and the project portfolio of the organization to answer questions like these:

- Who has experience with Neo4j?
- Do we have any project experience with Dialogflow?
- Who was the tech lead on our last project with Google?
- Do we have any reference in the healthcare industry?
- Do we have any clients in Thailand?
- etc.

#### Implementation and technology

For this challenge we recommend using the Google Cloud Platform (GCP) and its developer friendly managed services, allowing you to focus on solving the actual

business problems instead of putting a lot of effort into setting up the underlying infrastructure.

You would notice that the knowledge domain described above has a lot of different entities (Customer, Project, Skill, Engineer, etc....) and the questions have a relationship emphasis between these entities. Although it is possible to model this domain in a traditional relational database, considering the diversity of the entities and the possible relationships between them, using a graph database is more optimal and also provides a more flexible, extendable solution. For data storage we recommend Neo4J Aura, which is a fully managed, popular graph database that is available in GCP and it uses the Cypher query language. It is relatively easy to learn and the basic commands to create and query your graph objects are not too complicated.

Since the solution should be also usable by non-technical users like project managers and salespeople we expect a natural language interface, users should be able to query and maintain the data through a chatbot. For this purpose, we recommend using the Dialogflow, a managed natural language understanding platform on GCP used to design and implement conversational user interfaces.

## Who we are?

Aliz is a team of technology experts helping companies face future challenges by building data infrastructure and automation on Google Cloud. We provide data, machine learning, and infrastructure solutions to automate our clients' operations and modernize businesses to drive revenue growth. We are committed to bringing machine learning to as many people as possible, with a strong emphasis on the ethical principles of safe AI.

## What we will provide

**Technological expertise and best practices:** Our bread and butter are GCP, so our engineers have quite a lot of experience with the platform and technologies you will use during this challenge. These skills will prove crucial in creating the best solution and our mentors are always available to provide guidance on these topics.

**Infrastructure:** We provide you the GCP infrastructure where you can develop and deploy your solution.

**Domain knowledge:** The goal of the challenge is to provide a solution for a professional services company just like us. Our mentors will be able to give you a more detailed understanding of our internal processes and our needs.

We can also help with GCP credit. But guides can be found here [Free Trial and Free Tier](#) or here [Get and redeem education credits | Cloud Billing | Google](#)

## Judging criteria

Submissions will be judged along the following criteria:

- **Comprehensiveness:** How fully the submission covers the problem points raised. How many useful intents (questions) the system can help answer?
- **Innovativeness:** Additional ideas beyond the textual requirements of the challenge.
- **Design:** How well the solution is designed, clean & simple, elegant vs messy.
- **Presentation:** How the information is presented to the user, with a focus on clarity. Also important is the goal of the solution to show why a certain investment is good and to present the risks involved in a clear manner.
- **Prototype:** How finished the submission is.

## Prizes

The winner of this challenge will receive 500 €.